Amendment

The Examiner is respectfully requested to amend the above-identified application as follows.

IN THE CLAIMS:

Please amend Claims 1, 7, 15, 22, 25, 28, 32, 36 and 40, and add Claims 45-53 as follows. A marked-up copy of Claims 1, 7, 15, 22, 25, 28, 32, 36 and 40, showing the changes made thereto, is attached. Note that all the claims currently pending in this application, including those not presently being amended, have been reproduced below for the Examiner's convenience.

1.   (Twice Amended) A printhead comprising:

a plurality of printing elements for printing;

a block selection circuit that outputs a selection signal for selecting a block comprising a plurality of printing elements;

a printing control circuit which outputs a driving signal for selectively driving said printing elements, together with the selection signal, to each of said printing elements in correspondence with image data; and

an input portion, which receives external image data to be input to said printing control circuit,

wherein said input portion is adapted to receive the image data and block selection data input to said block selection circuit in a bus format of a plurality of bits.

2.   The printhead according to claim 1, wherein said input portion is adapted to parallelly receive the image data over a plurality of signal lines.

3.   The printhead according to claim 1, wherein said input portion is adapted to receive data in units of 4 bits.

4.   The printhead according to claim 1, wherein said block selection circuit includes a decoder.

5.   The printhead according to claim 1, wherein each of said printing elements performs printing using heat energy.

6.   The printhead according to claim 1, wherein each of said printing elements performs printing by discharging ink.

7.   (Twice Amended) A printhead comprising:

a plurality of printing elements for printing;

a block selection circuit that outputs a selection signal for selecting a block comprising a plurality of printing elements;

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a printing control circuit which outputs a driving signal for selectively driving said printing elements, together with the selection signal, to each of said printing elements in correspondence with image data; and

an input portion, which receives external image data to be input to said printing control circuit,

wherein said input portion is adapted to receive the image data in a bus format of a plurality of bits.

8.   The printhead according to claim 7, wherein said input portion is adapted to parallelly receive the image data over a plurality of signal lines.

9.   The printhead according to claim 7, wherein said input portion is adapted to receive data in units of 4 bits.

10.   The printhead according to claim 7, wherein said input portion is adapted to receive data to be input to said block selection circuit together with the image data.

11.   The printhead according to claim 7, wherein said input portion is adapted to continuously receive the image data and data to be input to said block selection circuit.

12.   The printhead according to claim 7, wherein said block selection circuit includes a decoder.

13.   The printhead according to claim 7, wherein each of said printing elements performs printing using heat energy.

14.   The printhead according to claim 7, wherein each of said printing elements performs printing by discharging ink.

15.   (Twice Amended) A printhead comprising:

a plurality of printing elements for printing;

a block selection circuit that outputs a selection signal for selecting a block comprising a plurality of printing elements;

a printing control circuit which outputs a driving signal for selectively driving said printing elements, together with the selection signal, to each of said printing elements in correspondence with image data; and

an input portion, which receives external image data to be input to said printing control circuit,

wherein said input portion is adapted to continuously receive the image data and data associated with a printing element driving timing.

16.   The printhead according to claim 15, wherein a printing element driving time is set in accordance with the data associated with the driving timing.
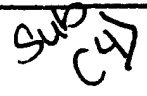
17.   The printhead according to claim 15, wherein said input portion is adapted to receive data to be input to said block selection circuit together with the image data.

18.   The printhead according to claim 15, wherein said input portion is adapted to continuously receive the image data and data to be input to said block selection circuit.

19.   The printhead according to claim 15, wherein said block selection circuit includes a decoder.

20.   The printhead according to claim 15, wherein each of said printing elements performs printing using heat energy.

21.   The printhead according to claim 15, wherein each of said printing elements performs printing by discharging ink.

22.   (Twice Amended) A method of driving a printhead including a plurality of printing elements for printing, a block selection circuit for outputting a

selection signal for selecting a block of a plurality of printing elements, a printing control circuit for outputting a driving signal for selectively driving the printing elements, together with the selection signal, to each of the printing elements in correspondence with image data, and input means for receiving external image data to be input to the printing control circuit, said method comprising the steps of:

causing the input means to receive the external image data and block selection data input to the block selection circuit in a bus format of a plurality of bits; and

causing the printing control circuit to drive the printing elements of the block selected by the block selection circuit in correspondence with the image data.

23. The method according to claim 22, wherein said receiving step comprises parallelly receiving the image data over a plurality of signal lines.

24. The method according to claim 22, wherein said receiving step comprises receiving data in units of 4 bits.

25. (Twice Amended) A method of driving a printhead including a plurality of printing elements for printing, a block selection circuit for outputting a selection signal for selecting a block of a plurality of printing elements, a printing control circuit for outputting a driving signal for selectively driving the printing elements, together with the selection signal, to each of the printing elements in correspondence with image

data, and input means for receiving external image data to be input to the printing control circuit, said method comprising the steps of:

causing the input means to receive the external image data in a bus format of a plurality of bits; and

causing the printing control circuit to drive the printing elements of the block selected by the block selection circuit in correspondence with the image data.

26.   The method according to claim 25, wherein said receiving step comprises parallelly receiving the image data over a plurality of signal lines.

27.   The method according to claim 25, wherein said receiving step comprises receiving data in units of 4 bits.

28.   (Twice Amended) A method of driving a printhead including a plurality of printing elements for printing, a block selection circuit for outputting a selection signal for selecting a block of a plurality of printing elements, a printing control circuit for outputting a driving signal for selectively driving the printing elements, together with the selection signal, to each of the printing elements in correspondence with image data, and input means for receiving external image data to be input to the printing control circuit, said method comprising the steps of:

causing the input means to receive data associated with a printing element driving timing continuously with the image data; and

causing the printing control circuit to drive the printing elements of the block selected by the block selection circuit in correspondence with the image data.

29. The method according to claim 28, further comprising setting a printing element driving time in accordance with the data associated with the driving timing.

30. The method according to claim 28, wherein said receiving step comprises receiving data input to the block selection circuit together with the image data.

31. The method according to claim 28, wherein said receiving step comprises continuously receiving the image data and data to be input to the block selection circuit.

32. (Twice Amended) A data output apparatus for outputting image data and a block selection signal to an input portion of a printhead, the printhead including (i) a plurality of printing elements for printing, (ii) a block selection circuit for outputting the selection signal for selecting a block of a plurality of printing elements, (iii) a printing control circuit for outputting a driving signal for selectively driving the printing elements together with the selection signal to each of the printing elements in correspondence with the image data, and (iv) the input portion, which receives external image data to be input to the printing control circuit, said apparatus comprising:

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an output unit that outputs the image data and block selection data input to

the block selection circuit in a bus format of a plurality of bits.

33.   The apparatus according to claim 32, wherein the image data is

parallelly output to the input portion over a plurality of signal lines.

34.   The apparatus according to claim 32, wherein data is output to the

input portion in units of 4 bits.

35.   The apparatus according to claim 32, wherein each of the printing

elements performs printing by discharging ink using heat energy.

36.   (Twice Amended) A data output apparatus for outputting image

data to an input portion of a printhead, the printhead including (i) a plurality of printing

elements for printing, (ii) a block selection circuit for outputting a selection signal for

selecting a block of a plurality of printing elements, (iii) a printing control circuit for

outputting a driving signal for selectively driving the printing elements in the block, the

printing control circuit adapted to output the driving signal together with the selection

signal to each of the printing elements in correspondence with the image data, and (iv) the

input portion, which receives external image data to be input to the printing control circuit,

said apparatus comprising:

an output unit that outputs the image data in a bus format of a plurality of bits.

37. The apparatus according to claim 36, wherein said apparatus is adapted to output, to the input portion, the image data together with data supplied to the block selection circuit.

38. The apparatus according to claim 36, wherein said apparatus is adapted to continuously output, to the input portion, the image data and data supplied to the block selection circuit.

39. The apparatus according to claim 36, wherein each of the printing elements performs printing by discharging ink using heat energy.

40. (Twice Amended) A data output apparatus for outputting image data to an input portion of a printhead, the printhead including (i) a plurality of printing elements for printing, (ii) a block selection circuit for outputting the selection signal for selecting a block of a plurality of printing elements, (iii) a printing control circuit for outputting a driving signal for selectively driving the printing elements in the block, the printing control circuit adapted to output the driving signal together with the selection signal to each of the printing elements in correspondence with the image data, and (iv) the input portion, which receives external image data to be input to the printing control circuit,

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wherein said data output apparatus continuously outputs the image data and data associated with a printing element driving timing.

41. The apparatus according to claim 40, wherein the data associated with the driving timing is data for setting a printing element driving time.

42. The apparatus according to claim 40, wherein data supplied to the block selection circuit is output to the input portion, together with the image data.

43. The apparatus according to claim 40, wherein the image data and data supplied to the block selection circuit are continuously output to the input portion.

44. The apparatus according to claim 40, wherein each of the printing elements performs printing by discharging ink using heat energy.

45. (New) The printhead according to claim 1, wherein said input portion is adapted to receive the image data and the block selection data in the same bus format.

46. (New) The printhead according to claim 7, wherein said input portion includes a shift register for sequentially shifting the received image data with the same number of bits as the bus format.

47. (New) The printhead according to claim 15, wherein said input portion is adapted to receive the image data and the data associated with the printing element driving timing in the same bus format.

48. (New) The method according to claim 22, wherein the input means receives the image data and the block selection data in the same bus format.

49. (New) The method according to claim 25, wherein the input means includes a shift register for sequentially shifting the received image data with the same number of bits as the bus format.

50. (New) The method according to claim 28, wherein the input means receives the image data and the data associated with the printing element drive timing in the same bus format.

51. (New) The apparatus according to claim 32, wherein said output unit outputs the image data and the block selection data in the same bus format.

52. (New) The apparatus according to claim 36, wherein said input portion includes a shift register for sequentially shifting the received image data with the same number of bits as the bus format.

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